

REMARKS

Claims 8, 11, 20-21, 23 and 31 have been amended. Claims 40-42 have been added. No claims have been canceled as part of this Reply. Accordingly, claims 8-42 are currently pending in the instant Patent Application. This paper is intended to be a complete response to the above-identified Office Action. Pursuant to 35 U.S.C. 132(b) and 37 C.F.R. 1.114, the above-identified application is the subject of a Request for Continued Examination.

A. Claim Rejections

Section 103(a) Rejections

In responding to the Examiner's prior art rejections, Assignee here only discusses the patentability of the independent claims (*i.e.*, claims 8, 23, 31 and 39). As the Examiner will appreciate, should these independent claims be patentable over the prior art, dependent claims would also necessarily be patentable. Accordingly, Assignee does not separately discuss the patentability of the dependent claims, although Assignee reserves the right to do so.

The Examiner has rejected claims 8-39 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Publication 2003/0011637 to Boudier ("Boudier") in view of U.S. Publication 2002/0109682 to Nash et al. ("Nash") and U.S. Publication 2005/0041031 A1 to Diard ("Diard").

Boudier

Boudier is directed to optimization of a scene graph. Boudier's scene graph is defined as "[t]he ***nodes of a scene graph represent features of the scene, such as physical objects and their attributes (e.g., colors and textures). The edges of a scene graph represent associations between the connected nodes.*** A node representing an object for example, may be connected to a node representing a texture for that object." Boudier at ¶ 1 (emphasis added). Boudier further clarifies this definition with "[a]n example of a scene graph is shown in **Fig. 1**. Scene graph **100** represents a

house. The house is identified with root node **110**. The house includes a number of components, such as door **120**, roof **130**, and aggregate walls **140**. Individual walls **150** through **180** are associated with aggregate walls **140**. Each wall can have some number of attributes. For example, wall **180** is shown having texture **190**.” Boudier at ¶ 1.

Nash

Nash is directed to “[a] memory management system [that] provides microcode instructions that are divided into multiple tuned phases and stored as separate modules inside a phase code depository ... The ability to select interchangeable phase modules to implement a desired mode reduces microcode memory requirements and allows easy integration and reuse of previously developed features among different games and other graphics software **developers** without having to rely on the type of platform.” Nash at Abstract (emphasis added). Nash’s Fig. 6 discloses “merger groups.” “Merger groups **606a-610** are a combination of two or more generic groups **502a-502l**. Merger groups **606a-610** can also be created by concatenating one or more generic groups **502a-502l** with one or more other merger groups **606a-610**. Additionally, merger groups **606a-610** can be a combination [*i.e.*, concatenation] of multiple merger groups **606a-601**.” Nash at ¶ 78 (emphasis in original), See also Nash at ¶¶ 79-82.

Claim 8

Independent claim 8, as amended, recites, *inter alia*, “representing, in memory, an image by an image graph wherein the image graph comprises one or more GPU programs, inputs to the one or more GPU programs and outputs from the one or more GPU programs.” The graph of the instant claims is further described in the Specification at least at ¶¶ 36-41. However, the graph disclosed in Boudier does not have anything to do with programs and inputs/outputs to programs. The nodes in Boudier’s graph represent features such as physical objects and attributes such as colors. The edges in Boudier’s graph represent associations. This is a fundamentally different kind of graph

from what is recited in Independent claim 8. In fact, the only thing in common between the disclosed graph of Boudier and the graph of the instant specification is that they both are used to represent associations between things.

In response to Assignee's previous arguments the Examiner asserts:

Applicant has provided small interpretations of prior art but applicant has only focused on small portions that actually have not much effect on the invention of the prior art being described. For example, Boudier is described in a short paragraph that summaries building a scene graph but applicant has not mentioned the use or how the scene graph, instead only mentioned the nodes. Nodes are only a very small portion of the general workings of any scene graph which is equivalent to the applicant claimed image graph. The components and steps, even when claimed together, fail to be specific enough to eliminate multiple interpretations to ones skilled in the art at the time of the invention and therefore will be given the broadest most reasonable interpretation.

Final Office Action dated 04 November 2009 at pp. 19-20.

Assignee submits that, as amended, claim 8 clearly recites a particular kind of image graph representation. This particular type of graph representation is not disclosed in either Boudier or Nash, either alone or in combination. Boudier clearly describes graphs where the nodes represent **physical objects** or **attributes** of those physical objects. Nash, as discussed further below, does not describe any kind of graph.

The Examiner admits "Boudier fails to specifically teach of **wherein the node(s) are program(s) and wherein executing the scene graph yielding a rendered image.**" Final Office Action dated 04 November 2009 at p. 4 (emphasis in original). The Examiner then asserts that Nash discloses this element and that Figure 6 "shows phase modules (nodes) of processing and each node comprises a specific program code to conduct the function within said node in a sequence." Final Office Action dated 04 November 2009 at p. 4. Apparently the Examiner is asserting that Nash's phase modules can be interpreted as disclosing the claimed nodes of Assignee's image graph. However, Nash is silent as to a graph where the nodes correspond to programs. In fact, Nash does not disclose a graph or a node anywhere at any time. Nash's Figure 6 appears to be relied upon by the Examiner as a graph. However, Nash's

Figure 6 is merely a pictorial representation to explain how "merger groups" may be created as a concatenation of other groups or modules. This is not a graph at all and certainly does not disclose Assignee's claimed image graph.

In summary, the combination of Boudier and Nash cannot disclose the claimed graph because Boudier's graph is fundamentally different from the claimed graph and Nash merely discloses that separate modules are selected from a phase code depository and loaded into a microcode memory for execution in a phase sequence. *See* Nash at Abstract. Further, there seems to be no logical method by which one could modify Boudier to arrive at the claimed invention – without the use of hindsight. Further, modifying Boudier as the Examiner proposes vitiates Boudier for its intended purpose (a clear indication that it is hindsight and not technical similarity that supports the Examiner's allegation). Therefore, Boudier fails as a primary reference and either alone or in combination with the proposed use of Diard and Nash, cannot render claim 8 obvious. As a consequence, the Examiner has failed to make a *prima facie* case of obviousness under 35 U.S.C. 103 or established Patent Office examining guidelines. Assignee respectfully requests the Examiner withdraw this rejection.

Furthermore, each of claims 9-22 depend from independent claim 8. Because Boudier, alone or in combination with either Nash or Diard, does not disclose each and every limitation of independent claim 8, each of claims 9-22 are patentable over the cited art. Assignee respectfully requests the Examiner withdraw this rejection.

Claim 23

The Examiner asserts that independent claim 23 is similar in scope to the combination of claims 8, 11, 14, 17, and 20 and incorporates the rationale for rejecting those claims into the rejection of claim 23. *See* Final Office Action dated 04 November 2009 at p. 12. The arguments above, regarding the fundamental difference between the combination of Boudier, Nash and Diard with respect to claim 8, apply with equal force here.

Additionally the Examiner specifically asserts in his rejection of independent claim 23 that "Boudier teaches ... creating a representation of said rendered polygon comprising a root node and its relationship with other nodes, their inputs and outputs." Office Action dated 09 April 2009 at p. 12. However, claim 23 recites, *inter alia*, "a root GPU program and its relationship with other GPU programs, their inputs and outputs." Boudier is perfectly silent as to any kind of relationship between a GPU program and other GPU programs. The relationship disclosed in Boudier is an association between a physical object and an attribute of that physical object. The leap between what Boudier teaches and what the Examiner alleges is not supported by the reference itself. As noted above, modifying Boudier as the Examiner proposes vitiates Boudier for its intended purpose – a clear indication that it is hindsight and not any rational application of the reference itself which is being applied.

Boudier therefore fails as a primary reference and either alone or in combination with the proposed use of Nash and Diard, cannot render claim 23 obvious. As a consequence, the Examiner has failed to make a *prima facie* case of obviousness under 35 U.S.C. 103 or established Patent Office examining guidelines. Assignee respectfully requests the Examiner withdraw this rejection.

Each of claims 24-30 depend from independent claim 23. Because Boudier, alone or in combination with either Nash or Diard, does not disclose each and every limitation of independent claim 23, each of claims 24-30 are patentable over the cited art. Assignee respectfully requests the Examiner withdraw this rejection.

Claim 31

The Examiner asserts that independent claim 31 is similar in scope to claim 23 and incorporates the rationale for rejecting that claim into the rejection of claim 31. *See* Office Action dated 09 April 2009 at p. 16. The arguments above, regarding the fundamental difference between Boudier vis-à-vis claims 8 and 23, apply with equal force here.

As shown above, Boudier fails as a primary reference and either alone or in combination with the proposed use of Nash and Diard, cannot render claim 31 obvious.

As a consequence, the Examiner has failed to make a *prima facie* case of obviousness under 35 U.S.C. 103 or established Patent Office examining guidelines. Assignee respectfully requests the Examiner withdraw this rejection.

Each of claims 32-38 depend from independent claim 31. Because Boudier alone or in combination with Nash or Diard does not disclose each and every limitation of independent claim 31, each of claims 32-38 are patentable over the cited art. Assignee respectfully requests the Examiner withdraw this rejection.

Claim 39

Independent claim 39 recites a computer readable medium to perform the methods recited in each of claims 8, 23 or 31. Since each of these claims are clearly patentable over the cited art as discussed above, so too is claim 39. Assignee respectfully requests the Examiner withdraw this rejection.

New claims 40-42

Independent claims 40-42 recite a computer system configured to perform the methods recited in each of claims 8, 23 or 31. Since each of these claims are clearly patentable over the cited art as discussed above, so too are claims 40-42. Assignee respectfully requests the Examiner issue a Notice of Allowance for claims 40-42.

Conclusion

This paper is intended to be a complete response to the above-identified Office Action. Assignee believes no fees are due that have not been filed herewith. However if it is found that additional fees are due the Commissioner is authorized to deduct the necessary charges from Deposit Account: 501922/119-0041US.

Reconsideration of pending claims 8-42 in light of the above remarks is respectfully requested. If, after considering this Reply, the Examiner believes that a telephone conference would be beneficial towards advancing this case to allowance, the Examiner is strongly encouraged to contact the undersigned attorney at the number listed.

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